

5.12 INFRASTRUCTURE

5.12.1 Alternative 1 – No Action

If Alternative 1 were implemented, infrastructure and utility repairs and upgrades would be conducted as part of on-going operations and landlord activities (Section 3.1 and Tables A.3 through A.5). However, remodeling, deactivation, demolition, and FRP construction would not occur, nor would staff be relocated from either Y-12 or commercially leased off-site facilities. Vehicle parking at ORNL would remain the same.

Existing utilities, the electric distribution system, processed/chilled water systems, ventilation and exhaust systems, sanitary water treatment system, stormwater collection system, water supply system, fire protection system, natural gas, compressed air systems and steam supply systems at each site would remain. Upgrades to the potable water systems and to electrical distribution systems are among the projects that are scheduled to occur within the next 10 years (see also Section 4.12). Alternative 1 is the baseline for comparison of effects that could result from implementation of Alternatives 2, 3, or 4 and would not result in any effects to infrastructure.

5.12.2 Alternative 2 – Remodel

If Alternative 2 were implemented, the infrastructure and utility projects scheduled under Alternative 1 would continue. In addition, upgrades to the HVAC and utility connections would be conducted as part of remodeling in Buildings 4500 N/S, 4501, 4505, 4508, and 5500. Some modifications to security provisions and fire protection might also be accomplished for the buildings that would be remodeled. Utilities in buildings to be deactivated or demolished under Alternative 2 would be disconnected and placed in a safe configuration. Implementation of Alternative 2 would have no adverse effects on the existing utilities, overall security, or the roadways and would have beneficial effects on the utilities of specifically affected buildings, although these would be minor in relation to overall conditions at ORNL.

5.12.3 Alternative 3 – Brownfield

Implementation of Alternative 3, the Preferred Alternative, would result in the effects already described under Alternative 2. In addition, the number of buildings to be remodeled, deactivated, and demolished would be expanded, and new FRP facilities would be constructed. Construction of the new buildings would include modification or installation of utilities and other support systems for the facilities. Infrastructure improvements, primarily to upgrade traffic controls and grounds, would be conducted at the East Campus and West Campus entrances. Similar improvements would be made to the 7900 (HFIR) area in Melton Valley. Several new parking areas would be constructed in the Bethel Valley campus area. Some of these would replace parking eliminated during construction of the FRP facilities, but some additional parking area would be created. Security fencing would be minimized as access restrictions are installed at building entrances, thus, making ORNL more open and enhancing its “campus” atmosphere. No effects from the FRP would result from implementation of Alternative 3 because the three facilities constructed within the SNS footprint would be serviced by the utilities and roads already servicing the SNS.

It is anticipated that improvements to utilities and infrastructure that would result from implementation of Alternative 3 would improve working conditions and reduce operating costs at ORNL through increased operating efficiencies, although quantitative estimates of this benefit would be speculative. No adverse effects to infrastructure would be likely to result from Alternative 3.

5.12.4 Alternative 4 – Greenfield

Implementation of Alternative 4 would result in the effects already described under Alternatives 2 and 3. In addition, utilities and infrastructure would be needed at the Greenfield Site. These are estimated to include extensions of approximately 457 LM (1,500 LF) each for piping of potable water, stormwater, wastewater, process water, and natural gas as well as telecommunication cables. Valving and drain systems for the stormwater lines, hydrants for the potable water, and a metering station for the natural gas line would be a part of these new utility requirements. Two electrical feeders would require relocation to serve the Greenfield Site, and electrical lines would be extended from them. Outdoor lighting would also be required at the Greenfield Site.

A new two-lane road, driveways, and some parking areas would also be built. Use of parking areas on the south side of Bethel Valley Road could be encouraged by the use of shuttle buses to minimize the need for new parking areas at the Greenfield Site. As for Alternative 3, badge readers to secure access into the new facilities would be installed to allow the site to maintain an open campus environment.

It is anticipated that improvements to utilities and infrastructure that would result from implementation of Alternative 4 would improve working conditions and reduce operating costs at remodeled ORNL facilities through increased operating efficiencies, although quantitative estimates of this benefit would be speculative. No adverse effects to infrastructure would be likely to result from Alternative 4, but the initial costs of installing utilities and infrastructure just to serve the Greenfield Site (\$15.6 million) as well as maintenance costs for the additional systems could be deemed an adverse effect from this alternative.